

WHAT IS CLAIMED IS:

1. A fuel-fired heating appliance comprising:
fuel burner apparatus having an inlet portion;
5 pressure regulator apparatus having an outlet portion coupled to
said inlet portion of said fuel burner apparatus, and a predetermined
pressure regulation setting; and
fuel delivery apparatus coupled to said pressure regulator apparatus
inlet portion and operative to deliver thereto a selectively variable one of
10 (1) a first fuel, from a source thereof, at a pressure greater than said
predetermined pressure regulation setting, and (2) a second fuel at a
pressure lower than said predetermined pressure regulation setting.
2. The fuel-fired heating appliance of Claim 1 wherein:
15 said fuel burner apparatus is of a non-aspirating type, and
said fuel-fired heating appliance further comprises a blower
operative to supply combustion air to said fuel burner apparatus.
3. The fuel-fired heating appliance of Claim 1 wherein:
20 said fuel-fired heating appliance is a boiler.
4. The fuel-fired heating appliance of Claim 1 wherein:
said first fuel is natural gas, and
said second fuel is propane.

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5. The fuel-fired heating appliance of Claim 1 wherein said fuel delivery apparatus includes:

valve apparatus connected to said pressure regulator apparatus inlet portion, said valve apparatus being operative to receive the first and
5 second fuels and permit the flow of a selectively variable one of them to said pressure regulator apparatus inlet portion.

6. The fuel-fired heating appliance of Claim 5 wherein:

said valve apparatus includes a three-way valve operative to receive
10 each of the first and second fuels.

7. The fuel-fired heating appliance of Claim 5 wherein said fuel delivery apparatus further includes:

a pressure regulator operative to reduce the pressure of the second
15 fuel when it is being flowed to said valve apparatus.

8. The fuel-fired heating appliance of Claim 1 wherein:

said fuel burner apparatus comprises a plurality of fuel burners, and
said pressure regulator apparatus comprises a plurality of pressure
20 regulators operatively coupled to said plurality of fuel burners.

9. A fuel-fired heating appliance comprising:

a fuel burner having an inlet orifice; and

a fuel supply system for alternately supplying first and second fuels having different Wobbe indexes to said inlet orifice at different pressures related to said different Wobbe indexes in a predetermined manner such that the firing rate of said fuel burner remains substantially the same, without changing said inlet orifice, regardless of which one of said first and second fuels is being supplied to said fuel burner.

10. The fuel-fired heating appliance of Claim 9 wherein:
said fuel-fired heating appliance is a fuel-fired boiler.

11. The fuel-fired heating appliance of Claim 9 wherein:
said fuel burner is a non-aspirating type burner; and

said fuel-fired heating appliance further comprises a blower operative to supply combustion air to said fuel burner.

12. The fuel-fired heating appliance of Claim 9 wherein said fuel supply system includes:

a first pressure regulator through which both of said first and second fuels must flow to reach said fuel burner, and

a second pressure regulator through which only the higher Wobbe index fuel must flow to reach said fuel burner.

13. The fuel-fired heating appliance of Claim 12 wherein:

the pressure regulation setting of said first pressure regulator is higher than the pressure regulation setting of said second pressure regulator.

14. A fuel-fired heating appliance comprising:
non-aspirating type fuel burner apparatus having an orificed fuel inlet portion;

blower apparatus for supplying combustion air to said fuel burner apparatus;

a main fuel supply line structure coupled to said orificed fuel inlet portion;

first pressure regulator apparatus connected in said main fuel line structure and having an inlet portion and a first pressure regulation setting;

a first branch fuel supply line structure, coupled to said inlet portion of said first pressure regulator apparatus, for receiving a pressurized first fuel;

a second branch fuel supply line structure, coupled to said inlet portion of said first pressure regulator apparatus, for receiving a pressurized second fuel having a Wobbe index higher than that of said first fuel;

valve apparatus operable to permit flow of only a selectively variable one of said first and second fuels to said inlet portion of said first pressure regulator apparatus and thus to said orificed fuel inlet portion of said fuel burner apparatus; and

second pressure regulator apparatus connected in said second branch fuel supply line structure and having a second pressure regulation setting,

said first and second pressure regulation settings being related to one another in a predetermined manner such that, without altering said orificed fuel inlet portion of said burner apparatus, the firing rate of said burner apparatus will remain essentially constant regardless of which of said first and second fuels is being supplied thereto.

15. The fuel-fired heating appliance of Claim 14 wherein:
said fuel-fired heating appliance is a dual fuel boiler.

16. The fuel-fired heating appliance of Claim 14 wherein:

5 said burner apparatus comprises a plurality of non-aspirating type
fuel burners each having an orificed inlet.

17. The fuel-fired heating appliance of Claim 14 wherein:

10 said first pressure regulation apparatus comprises a plurality of
pressure regulator devices.

18. The fuel-fired heating appliance of Claim 14 wherein:

15 said valve apparatus comprises a three-way switching valve to which
each of said first and second branch fuel supply line structures is
operatively coupled.

19. The fuel-fired heating appliance of Claim 14 wherein:

20 said first pressure regulation setting is greater than said second
pressure regulation setting.

20. A dual fuel method of supplying fuel to burner apparatus having an inlet portion, said method comprising the steps of:

providing pressure regulator apparatus having inlet and outlet portions and a predetermined pressure regulation setting;

5 operatively coupling said pressure regulator apparatus outlet portion to the burner apparatus inlet portion; and

flowing to said pressure regulator apparatus inlet portion a selectively variable one of (1) a first fuel at a pressure greater than said predetermined pressure regulation setting, and (2) a second fuel at a
10 pressure lower than said predetermined pressure regulation setting.

21. The method of Claim 20 wherein:

said flowing step is performed using a second fuel having a Wobbe index greater than that of said first fuel.

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22. A method of operating a fuel-fired heating appliance, said method comprising the steps of:

providing the fuel-fired heating appliance with a fuel burner having an inlet orifice; and

5 alternately supplying first and second fuels having different Wobbe indexes to said inlet orifice at different pressures related to said different Wobbe indexes in a predetermined manner such that the firing rate of said fuel burner remains substantially the same, without changing said inlet orifice, regardless of which one of said first and second fuels is being
10 supplied to said fuel burner.

23. The method of Claim 22 wherein:

said second fuel has a Wobbe index greater than that of said first fuel, and

15 said alternately supplying step is performed in a manner supplying said first fuel to said inlet orifice at a higher pressure than the pressure at which said second fuel is supplied to said inlet orifice.